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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,365	10/14/2005	Amit Dutta	884A.0110.U1(US)	9079
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HARRINGTON & SMITH, PC 4 RESEARCH DRIVE, Suite 202 SHELTON, CT 06484-6212			EXAMINER NGUYEN, LUONG TRUNG	
			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/553,365	Applicant(s) DUTTA ET AL.	
	Examiner LUONG T. NGUYEN	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 4-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 10-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 October 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species I (Figures 2-3) reads on claims 1-3, 10-14 in the reply filed on 07/17/2008 is acknowledged. The traversal is on the ground(s) that there should be no undue burden for the examiner to examine of all of the claims of the U.S. application, and the Examiner has not listed different groups of claims and explained why each group lacks unity with each other group. This is not found persuasive because of the following reasons.

This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT rule 13.1. These species are distinct for the reasons:

It should be noted that *claims are definitions of invention and Species are always the specifically different embodiments*. See MPEP 806.04(e); and *where two or more species are claimed, a requirement for restriction to a single species may be proper if the species are mutually exclusive*. See MPEP 806.04 (f).

This application contains claims to three different species as discussed follow.

1/ Species I (Figures 2-3) discloses camera module 28, which does not require gamma correction 30 and lossless compression 32 as required in Species II (Figure 4) or Species III (Figure 5). The search for Species I does not require the search for the feature gamma correction 30 and lossless compression 32 as required in Species II or Species III. Therefore, there is burden for the examiner to examine of all of the claims of the U.S. application.

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2/ Species I (Figures 2-3) or Species II (Figure 4) does not require Lossless Decompression 34 as required in Species III (Figure 5). The search for Species I does not require the search for the feature lossless decompression 34 as required in Species III. The search for Species II does not require the search for the feature lossless decompression 34 as required in Species III. Therefore, there is burden for the examiner to examine of all of the claims of the U.S. application.

3/ It should be noted that the Applicants also admit that claims 4-9 correspond to Species II and III. This indicates that there are different Species, which are claimed in this application.

Therefore, the restriction requirement between Species is appropriate, the applicant is required to elect a single disclosed Species under 35 U.S.C. 121, and along with a listing of all claims readable thereon including any claims subsequent added. MPEP 809.02 (a).

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 4-9 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 07/17/2008.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 10/14/2005, 04/10/2007, 01/22/2008 have been considered by the examiner.

Drawings

4. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

5. Claims 1-3, 10-14 are objected to because of the following informalities:

Claim 1 (lines 4-5), "the telephone" should be changed to --the mobile camera telephone--.

Claim 1(line 6), "in RAW format" should be changed to --in the RAW format--.

Claim 11(line 6), "camera image processing" should be changed to --the camera image processing--.

Claim 14 (line 4), "the mobile camera telephone" should be changed to --the mobile camera telephone;--.

Claim 14 (line 9), "that image in the telephone" should be changed to --the image in the mobile camera telephone--.

Claims 2-3, 10-13 are objected as being dependent on claim 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3, 10, 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Haavisto (EP 1215894).

Regarding claim 1, Haavisto discloses a mobile camera telephone (device 300, which comprises electronic device 302 and camera module 301, figure 3, column 4, paragraph [0010]) comprising:

a camera module (camera module 301, figure 3, column 4, paragraphs [0010] – [0011]) for capturing an image and providing digital data in an RAW format;

an application processor (i.e., an electronic device 302, figure 3, column 4, paragraph [0010]) including a CPU (processor 314, figure 3, column 4, paragraphs [0010], [0012]) for controlling the operation of the telephone and hardware (i.e., an image processor 316, figure 3, columns 4-5, paragraphs [0012] – [0013]) arranged to perform arranged to perform camera image processing on the digital data in RAW format received from the camera module.

Regarding claim 2, Haavisto discloses wherein the camera module comprises optics, an image sensor and an analogue to digital converter only, and is without image processing facility (figure 3, column 4, paragraph [0010]).

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Regarding claim 3, Haavisto discloses wherein the digital data is the digitized output of an image sensor (column 4, paragraph [0010]).

Regarding claim 10, Haavisto discloses the application processor is a system on chip (figure 3, column 4, paragraph [0010]).

Regarding claim 14, Haavisto discloses a method of recording an image using a mobile camera telephone comprising the steps of:

capturing an image in a first camera component of the mobile camera telephone (capturing an image by camera module 301, figure 3, column 4, paragraph [0010]);

sending digital data in an RAW format from the first camera component to a second application processing component of the mobile camera telephone (image data is transferred from camera module 301 to an electronic device 302, figure 3, paragraphs [0010] - [0013]); and, in the second application processing component, both image processing the digital data in RAW format to produce an image for viewing and controlling the storage of that image in the telephone (an image processing 314 for processing image data; the processed image data is transferred to display 317 for viewing or to memory 315 for storing, figure 3, paragraphs [0010] – [0013]).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haavisto (EP 1215894) in view of Obrador (US 2004/0090548).

Regarding claim 11, Haavisto fails to specifically disclose wherein the application processor includes a hard-wired pipeline processor for the camera image processing. However, Obrador discloses an image capture system 10, which utilizes only one hardware processing pipeline 36 (figure 4, paragraphs [0020] –[0021]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention to modify the device in Haavisto by the teaching of Obrador in order to obtain an apparatus, which utilizes a hardware processing pipeline to support a still image processor and a video processor.

10. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haavisto (EP 1215894) in view of Hsu et al. (WO 01/01675).

Regarding claim 12, Haavisto fails to specifically disclose wherein the application processor includes a programmable hardware accelerator. However, Hsu discloses a video camera with major function implemented in host software, which can be embodied in any microprocessor capable of single instruction multiple data (SIMD) execution, which corresponds

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to programmable hardware accelerator (page 9, lines 27-29). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention to modify the device in Haavisto by the teaching of Hsu et al. in order to perform function such as addition, subtraction, multiplication, etc..., with the same instruction. This reduces processing time of image processing.

Regarding claim 13, Hsu et al. discloses the programmable hardware accelerator is a SIMD processing accelerator optimized for camera image processing (SIMD, page 9, lines 27-29).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lee et al. (US 7,414,656) discloses mobile terminal with camera.

Nakae et al. (US 7,345,696) discloses collapsible cellular communication terminal having a camera photographing control function and photographing control method in the terminal.

Harma et al. (US 2002/0111188) discloses optimized camera sensor architecture for a mobile telephone.

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUONG T. NGUYEN whose telephone number is (571)272-7315. The examiner can normally be reached on 7:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID L. OMETZ can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LTN
09/25/08

/LUONG T NGUYEN/
Examiner, Art Unit 2622